

Lightning Tracking Tool for Assessment of Total Cloud Lightning within AWIPS II

Jason E. Burks¹

¹NASA Marshall Space Flight Center / Earth Science Office, Huntsville, Alabama

Geoffrey T. Stano²

²ENSCO, Inc. / NASA Short-term Prediction Research and Transition (SPoRT) Center, Huntsville, Alabama

Ken Sperow³

³CIRA / NOAA Office of Science and Technology / Meteorological Development Laboratory, Silver Spring, Maryland

Submission to the 26th Conference on Weather Analysis and Forecasting / 22nd Conference on Numerical Weather Prediction/ 94th AMS Annual Meeting (2014) in Atlanta, GA
Session: "New Tools for Decision Support Services"

ABSTRACT

Total lightning (intra-cloud and cloud-to-ground) has been widely researched and shown to be a valuable tool to aid real-time warning forecasters in the assessment of severe weather potential of convective storms. The trend of total lightning has been related to the strength of a storm's updraft. Therefore a rapid increase in total lightning signifies the strengthening of the parent thunderstorm. The assessment of severe weather potential occurs in a time limited environment and therefore constrains the use of total lightning. A tool has been developed at NASA's Short-term Prediction Research and Transition (SPoRT) Center to assist in quickly analyzing the total lightning signature of multiple storms. The development of this tool comes as a direct result of forecaster feedback from numerous assessments requesting a real-time display of the time series of total lightning. This tool also takes advantage of the new architecture available within the AWIPS II environment. SPoRT's lightning tracking tool has been tested in the Hazardous Weather Testbed (HWT) Spring Program and significant changes have been made based on the feedback. In addition to the updates in response to the HWT assessment, the lightning tracking tool may also be extended to incorporate other requested displays, such as the intra-cloud to cloud-to-ground ratio as well as incorporate the lightning jump algorithm.